

REMARKS

In the Office Action dated November 26, 2007, claims 1-39, 41-46 and 48-52 were pending. Claims 1-39, 41-46, and 48-52 were rejected under 35 U.S.C. § 112. Claims 1-14, 21-39, 41-46 and 48-52 were rejected under 35 U.S.C. § 103.

In this response, no claim has been canceled. Claims 1, 9, 15, 30, 39, and 46 have been amended. No new matter has been added. Reconsideration of this application as amended is respectfully requested.

Rejections Under 35 U.S.C. §112

Claims 1-39, 41-46, and 48-52 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner asserts that the claim limitation “each of the working paths within the group is associated with a different and unique priority” (Office Action, p. 3). Applicant respectfully submits that claims 1-39, 41-46, and 48-52 satisfy the written description requirement. In paragraph 69 of Applicant’s specification, Applicant recites “[a]ccording to one embodiment, no more than one of the working paths have the same priority would be allowed to share the same 1:N protection path.” Because within this group, working paths cannot have the same priority, these working paths have different and unique priorities. Thus, claims 1-39, 41-46, and 48-52 satisfy the written description requirement.

Claims 9-13, 27-28, and 43-44 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully submits that claims 9-13, 27-28, and 43-44, as amended, satisfy 35 U.S.C. § 112, second paragraph.

Accordingly, Applicant respectfully requests the removal of the 35 U.S.C. § 112 rejections.

Rejections Under 35 U.S.C. §103(a)

Claims 1-13 and 21-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,587,235 B1 to Chaudhuri, et al. ("Chaudhuri '235 patent") in view of U.S. Patent Application Publication No. 2004/0120705 A1 to Friskney, et al. ("Friskney"). In view of the foregoing amendments, it is respectfully submitted that the present invention as claimed includes limitations that are not disclosed or suggested by the cited references.

Specifically, for example, independent claim 1 as amended recites as follows:

- I. A method performed in an access node of a wavelength division multiplexing optical network, the method comprising:
 - receiving a demand for allocating a protection path that meets a set of disjointness constraints with respect to a working path, the protection path suitable to be shared with one or more other working paths, each of the working paths associated with a priority for obtaining the shared protection path; and
 - in response to the demand, selecting a protection path that meets the set of disjointness constraints with respect to the working path and has not been shared with another working path having the same priority as the working path associated with the protection path in demand, wherein the selected protection path is selected from a plurality of protection paths and wherein each of the protection paths is shared by a group of a plurality of working paths in a 1:N protection scheme, wherein each of the working paths in the group of plurality of working paths only use the selected protection path for protection, wherein each of the working paths within the group is associated with a different and unique priority, such that when multiple working paths sharing the same protection path fail simultaneously, a failed working path with a higher priority retains the shared protection path.

(Emphasis added)

Independent claim 1 as amended is related to a 1:N protection scheme where a group of multiple working paths share with a single protection path and the single protection path is

the only protection path for each of the multiple working groups. However, within the group, each working path is associated with a different and unique priority. Thus, when multiple working paths fail simultaneously, a failed working path having a higher priority gets the protection path in a 1:N protection scheme. Here the priorities of the working paths are used as a contention resolution scheme. It is respectfully submitted that these limitations are absent from the cited references.

Chaudhuri '235 patent discloses both 1:1 and 1:N protection schemes, where SP (super premium) channels are protected using 1:1 protection scheme because there are at least an equal number of restoration (R) channels as SP channels. The S (standard) channels can be protected either 1:1 or 1:N protection scheme. That is why, as acknowledged by the Office Action that the number of R (restoration) channels equals to the number of SP channels because they require 1:1 protection. The different priority schemes referred to by Chaudhuri '235 patent are 1:1 vs. 1:N protection schemes. See for example, Chaudhuri '235 patent, col. 7, line 66 – col. 8, line 34.

However, regarding 1:N protection scheme used by S channels, there is no disclosure within Chaudhuri '235 patent that each of the S channels that share the same protection path is associated with a different and unique priority for the contention resolution purposes. In Chaudhuri '235 patent's system, if there were multiple S channels fail at the same time, it is difficult to determine which of the failed S channels gets the shared protection path since they have the same priority.

The Examiner asserts that Chaudhuri '235 "can be viewed as a 1:2 protection where an R channel protects an SP channel and an S channel" (Office Action, p. 12). Thus, the Examiner is interpreting Chaudhuri's SP channel as participating in a 1:N protection scheme.

However, because Chaudhuri discloses that there are at least as many R channels as there are SP channels, the SP channels are participating in a 1:1 type of protection scheme, not a 1:N.

Furthermore, Chaudhuri discloses that there is a group of R channels used to protect SP and S channels. Because there is a group of R channels for each of the SP and S channels, Chaudhuri does not teach or suggest “the selected protection path is selected from a plurality of protection paths” and “each of the working paths in the group of plurality of working paths only use the selected protection path for protection”

It is respectfully submitted that the limitations set forth above are absent from Chaudhuri '235 patent as well as Friskney.

Therefore, for reasons set forth above, it is respectfully submitted that claim 1 is patentable over the cited reference. Similarly, independent claims 15, 30, and 46 include limitation similar to those set forth above. Thus, for reasons similar to those set forth above, it is respectfully submitted that claims 15, 30, and 46 are patentable over the cited references. Given that the rest of the claims depend from one of the above independent claims, for reasons similar to those set forth above, it is respectfully submitted that the rest of the claims are also patentable over the cited references.

Claims 1-13, 15-22, 27-31, and 36-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0057724 to Okansen, et al. in view of U.S. Patent No. 5,933,590 to Allen, et al. and U.S. Patent Publication No. 2005/0036442 to Saleh et al. In view of the foregoing amendments, it is respectfully submitted that the present invention as claimed includes limitations that are not disclosed or suggested by the cited references.

Okansen discloses an optical network that has different protection types for different links (Okansen, Abstract). Okansen also discloses a 1:N protection system where N working fibers share a single protection fiber, where the protection fiber can handle the failure on any of the single working fibers (Okansen, paragraph 55). In one scenario, Okansen discloses a different priority level can be specified for of the fibers 51-54 (*Id.*). If the fiber is cut in one fiber, the traffic routed to the protection fiber 55 (*Id.*). If a second fiber is cut that has a lower priority, the traffic on this lower priority fiber will be routed across a second and different fiber 52 (*Id.*). Thus, Okansen discloses multiple fibers with different priorities using multiple protection fibers.

Allen discloses restoring communications in a network having multiple span failures (Allen, Abstract).

Saleh discloses restoring a virtual path provisioned between a source and target node (Saleh, Abstract). Saleh further discloses provisioning the virtual path using 1:N protection (Saleh, paragraphs 36-41).

The combination of Okansen's multiple working paths fibers of different priority using multiple protection paths being provisioned between a source and target node. However, because there are multiple protection paths for this group of working paths, this combination does not teach or suggest each of the working paths in the group of plurality of working paths only use the selected protection path for protection. See, for example, independent claim 1 above.

It is respectfully submitted that the limitations set forth above are absent from Chaudhuri '235 patent as well as Allen and Saleh.

Therefore, for reasons set forth above, it is respectfully submitted that claim 1 is patentable over the cited reference. Similarly, independent claims 15, 30, and 46 include

limitation similar to those set forth above. Thus, for reasons similar to those set forth above, it is respectfully submitted that claims 15, 30, and 46 are patentable over the cited references. Given that the rest of the claims depend from one of the above independent claims, for reasons similar to those set forth above, it is respectfully submitted that the rest of the claims are also patentable over the cited references.

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chaudhuri '235 patent and Friskney as applied to claims 1-13 and 21-38 above, and further in view of Eli-Dit-Cosaque et al. U.S. Patent Application Publication No. 2004/0218525 A1 to Eli-Dit-Cosaque, et al. ("Eli-Dit-Cosaque").

Claims 39, 43-46 and 50-52 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chaudhuri '235 patent and Friskney as applied to claims 1-13 and 21-38 above, and further in view of U.S. Patent 6,130,876 to Chaudhuri ("Chaudhuri '876 patent").

For reasons similar to those set forth above, it is respectfully submitted that Eli-Dit-Cosaque and Chaudhuri '876 patent also fail to disclose or suggest the limitations set forth above. Therefore, for reasons similar to those discussed above, it is respectfully submitted that the present invention as claimed is patentable over the cited references. Withdrawal of the rejections is respectfully requested.

Claims 39, 43-46 and 50-52 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Oksanen, Allen, and Saleh as applied to claims 1-13 and 21-38 above, and further in view of Chaudhuri '876 patent.

For reasons similar to those set forth above, it is respectfully submitted that Oksanen, Allen, and Saleh and Chaudhuri '876 patent also fail to disclose or suggest the limitations set forth above. Therefore, for reasons similar to those discussed above, it is respectfully

submitted that the present invention as claimed is patentable over the cited references.

Withdrawal of the rejections is respectfully requested.

CONCLUSION

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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/Eric S. Replogle/

Eric S. Replogle
Attorney for Applicant
Reg. No. 52,161

1279 Oakmead Parkway
Sunnyvale, CA 94085
(408) 720-8300